

Remarks

Reconsideration and reexamination of the above-identified patent application, as amended, are respectfully requested. Claims 18 and 20 are pending in this application upon entry of this Amendment. In this Amendment, the Applicant has amended claims 18 and 20.

Claim Rejections - 35 U.S.C. § 102

In the Office Action mailed on May 21, 2003, the Examiner rejected claims 18 and 20 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,576,724 issued to Fukatsu et al. ("Fukatsu") and by JP 2-227340 issued to Kadomuki et al. ("Kadomuki"). The Applicant believes that the claimed invention is patentable over both Fukatsu and Kadomuki and has amended independent claims 18 and 20 to more clearly define thereover.

The Applicant has amended independent claim 18 to more clearly recite that a fill pattern for the heads-up display (HUD) is selected dependent upon the determined texture (or structural features as recited in amended independent claim 20) of the environmental image in order to contrast the HUD relative to the environmental image. Support for these amendments is found on FIGS. 3A and 3B; and page 2, lines 1-5 and lines 10-18; page 4, lines 7-13; and page 4, line 20 through page 5, line 6; page 5, line 16 through page 6, line 7 of the Applicant's specification.

1. Background of the Claimed Invention

As described on page 1, lines 1-17 of the Applicant's specification, a HUD is directed onto the windshield of a vehicle in order to display information for a vehicle operator. Information typically displayed by the HUD is the speed of the vehicle. As the HUD is displayed onto the vehicle windshield, the background of the HUD includes the oncoming surroundings of the vehicle. For instance, the background of the HUD includes the road, trees, sky, other vehicles, etc., ahead of the vehicle, i.e., the background of the HUD is the

scene viewed by the vehicle operator as the vehicle operator looks through the windshield ahead of the vehicle.

In some situations, there may be an arrangement of environmental factors in the background that make the HUD difficult for the vehicle operator to see or distinguish from the background. For example, the visibility of the HUD be affected by a background produced by a gravel road (34) (FIG. 3A) or elongated crops (42) (FIG. 3B). As such, if the HUD is formed with the same or similar fill pattern as the pattern of the background, then the HUD may be difficult for the vehicle operator to view.

2. The Claimed Invention

The claimed invention, as recited in amended independent claims 18 and 20, is a vehicle display system and method which provide a HUD onto a windshield of a moving vehicle. A control arrangement controls the contrast of the HUD relative to an environmental image approaching the moving vehicle. To this end, the control arrangement captures the environmental image approaching the moving vehicle, determines texture or structural features of the environmental image, and controls the contrast of the heads-up display in response to the texture of the environmental image approaching the moving vehicle. Specifically, the control arrangement selects an appropriate fill pattern for the HUD dependent upon the texture or structural features of the environmental image in order to contrast the HUD relative to the environmental image.

As such, the claimed invention compensates for factors in the environmental image in order to improve the contrast of the HUD relative to the environmental image by controlling the fill pattern of the HUD dependent upon the environmental image. For example, in the case of a gravel road environmental image (34), the fill pattern of the HUD may be selected to be elongated bars (36) in order to improve the clarity of the HUD relative to the gravel road. Similarly, in the case of an elongated crop environmental image (42), the fill

pattern of the HUD may be selected to be dots (44) in order to improve the clarity of the HUD relative to the elongated crops.

3. Fukatsu and Kadomuki

The Examiner posited that Fukatsu teaches a control arrangement which selects an appropriate luminance, brightness, and color for the HUD dependent upon the environmental image (citing FIG. 4; col. 6, lines 5-9 and 40-45). The Examiner posited that Kadomuki teaches a signal processing unit which selects an appropriate luminance, brightness, and color for the HUD dependent upon the environmental image (citing FIGS. 1-5; page 12, line 25 through page 13, line 6).

4. The Claimed Invention Compared to Fukatsu and Kadomuki

The claimed invention generally differs from both Fukatsu and Kadomuki in that the control arrangement selects a fill pattern for the HUD dependent upon texture or structural features of the environmental image in order to contrast the HUD relative to the environmental image (see FIGS. 3A and 3B). As such, the claimed invention controls the contrast of the HUD relative to the texture and structural features of the environmental image by selecting a fill pattern for the HUD which contrasts to the texture and structural features. Neither Fukatsu nor Kadomuki teach or suggest selecting a fill pattern for the HUD dependent upon the texture or structural features of the environmental image in order to contrast the HUD relative to the environmental image.

In view of the foregoing amendments and remarks, the Applicant believes that amended independent claims 18 and 20 patentably distinguish over both Fukatsu and Kadomuki. Therefore, the Applicant respectfully requests reconsideration and withdrawal of the rejection to the claims under 35 U.S.C. § 102(b).

CONCLUSION

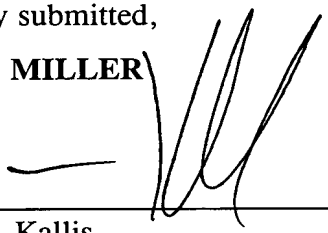
In summary, amended independent claims 18 and 20 meet the substantive requirements for patentability. The case is in appropriate condition for allowance. Accordingly, such action is respectfully requested.

If a telephone or video conference would expedite allowance or resolve any further questions, such a conference is invited at the convenience of the Examiner.

Respectfully submitted,

ROBIN M. MILLER

By


James N. Kallis
Reg. No. 41,102
Attorney for Applicant

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BROOKS & KUSHMAN P.C.
1000 Town Center, 22nd Floor
Southfield, MI 48075
Phone: 248-358-4400
Fax: 248-358-3351